

SEQUENCE LISTING

<110> Chen, Don J.

<120> NOVEL NUCLEAR RECEPTOR COREPRESSOR MOLECULES
AND USES THEREFOR

<130> UMG-030

<140>

<141>

<150> 60/193,138

<151> 2000-03-29

<160> 6

<170> PatentIn Ver. 2.0

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<211> 8686

<212> DNA

<213> Homo sapiens

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Ser	Ile	Ala	Arg	Gly	Ala	Pro	Val	Ile	Val	Pro	Glu	Leu	Gly	Lys	Pro	
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Arg	Gln	Ser	Pro													

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Val	Pro	Pro	Val	Ser	Gly	His	Ala	Thr	Ile	Ala	Arg	Thr	Pro	Ala	Lys	
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Asn	Leu	Ala	Pro	His	His	Ala	Ser	Pro	Asp	Pro	Pro	Ala	Pro	Pro	Ala	
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Pro Ala Pro Gly Leu Ala Ser Gly Asp Arg Pro Pro Ser Val Ser Ser	
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Pro Pro Gly Leu Pro Ala Gly Ser Gly Pro Leu Ala Gly Pro His His	
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Thr His Thr Asp Val Gly Leu Leu Glu Tyr Gln His His Ser Arg Asp
      35          40          45

Tyr Ala Ser His Leu Ser Pro Gly Ser Ile Ile Gln Pro Gln Arg Arg
      50          55          60

Arg Pro Ser Leu Leu Ser Glu Phe Gln Pro Gly Asn Glu Arg Ser Gln
  65          70          75          80

Glu Leu His Leu Arg Pro Glu Ser His Ser Tyr Leu Pro Glu Leu Gly
      85          90          95

Lys Ser Glu Met Glu Phe Ile Glu Ser Lys Arg Pro Arg Leu Glu Leu
      100          105          110

Leu Pro Asp Pro Leu Leu Arg Pro Ser Pro Leu Leu Ala Thr Gly Gln
      115          120          125

Pro Ala Gly Ser Glu Asp Leu Thr Lys Asp Arg Ser Leu Thr Gly Lys
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Cys 465	Val	Leu	Tyr	Tyr	Tyr	Leu	Thr	Lys	Lys	Asn	Glu	Asn	Tyr	Lys	Ser	480
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Ala 1010	Pro	Pro	Ala	Asp	Lys	Glu 1015	Ala	Glu	Lys	Pro	Val 1020	Phe	Phe	Pro	Ala		
Phe 025	Ala	Ala	Glu	Ala	Gln 1030	Lys	Leu	Pro	Gly	Asp 1035	Pro	Pro	Cys	Trp	Thr 1040		
Ser	Gly	Leu	Pro	Phe 1045	Pro	Val	Pro	Pro	Arg 1050	Glu	Val	Ile	Lys	Ala	Ser		
Pro	His	Ala 1060	Pro	Asp	Pro	Ser	Ala 1065	Phe	Ser	Tyr	Ala	Pro 1070	Pro	Gly	His		
Pro	Leu 1075	Pro	Leu	Gly	Leu	His	Asp 1080	Thr	Ala	Arg	Pro	Val 1085	Leu	Pro	Arg		
Pro 1090	Pro	Thr	Ile	Ser	Asn	Pro 1095	Pro	Pro	Leu	Ile	Ser 1100	Ser	Ala	Lys	His		
Pro 105	Ser	Val	Leu	Glu 1110	Arg	Gln	Ile	Gly	Ala 1115	Ile	Ser	Gln	Gly	Met	Ser 1120		

His Thr Pro Glu Leu Pro Leu Ala Pro Arg Pro Leu Lys Glu Gly Ser
425 1430 1435 1440

Ile Thr Gln Gly Thr Pro Leu Lys Tyr Asp Thr Gly Ala Ser Thr Thr
1445 1450 1455

Gly Ser Lys Lys His Asp Val Arg Ser Leu Ile Gly Ser Pro Gly Arg
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Thr Phe Pro Pro Val His Pro Leu Asp Val Met Ala Asp Ala Arg Ala
1475 1480 1485

Leu Glu Arg Ala Cys Tyr Glu Glu Ser Leu Lys Ser Arg Pro Gly Thr
1490 1495 1500

Ala Ser Ser Ser Gly Gly Ser Ile Ala Arg Gly Ala Pro Val Ile Val
505 1510 1515 1520

Pro Glu Leu Gly Lys Pro Arg Gln Ser Pro Leu Thr Tyr Glu Asp His
1525 1530 1535

Gly Ala Pro Phe Ala Gly His Leu Pro Arg Gly Ser Pro Val Thr Met
1540 1545 1550

Arg Glu Pro Thr Pro Arg Leu Gln Glu Gly Ser Leu Ser Ser Ser Lys
1555 1560 1565

Ala Ser Gln Asp Arg Lys Leu Thr Ser Thr Pro Arg Glu Ile Ala Lys
1570 1575 1580

Ser Pro His Ser Thr Val Pro Glu His His Pro His Pro Ile Ser Pro
585 1590 1595 1600

Tyr Glu His Leu Leu Arg Gly Val Ser Gly Val Asp Leu Tyr Arg Ser
1605 1610 1615

His Ile Pro Leu Ala Phe Asp Pro Thr Ser Ile Pro Arg Gly Ile Pro
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Leu Asp Ala Ala Ala Ala Tyr Tyr Leu Pro Arg His Leu Ala Pro Asn
1635 1640 1645

Pro Thr Tyr Pro His Leu Tyr Pro Pro Tyr Leu Ile Arg Gly Tyr Pro
1650 1655 1660

Asp Thr Ala Ala Leu Glu Asn Arg Gln Thr Ile Ile Asn Asp Tyr Ile
665 1670 1675 1680

Thr Ser Gln Gln Met His His Asn Thr Ala Thr Ala Met Ala Gln Arg
1685 1690 1695

Ala Asp Met Leu Arg Gly Leu Ser Pro Arg Glu Ser Ser Leu Ala Leu
1700 1705 1710

Asn Tyr Ala Ala Gly Pro Arg Gly Ile Ile Asp Leu Ser Gln Val Pro
1715 1720 1725

His Leu Pro Val Leu Val Pro Pro Thr Pro Gly Thr Pro Ala Thr Ala
1730 1735 1740

Met Asp Arg Leu Ala Tyr Leu Pro Thr Ala Pro Gln Pro Phe Ser Ser
745 1750 1755 1760

Arg His Ser Ser Ser Pro Leu Ser Pro Gly Gly Pro Thr His Leu Thr

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1765						1770						1775					
Lys	Pro	Thr	Thr	Thr	Ser	Ser	Ser	Ser	Glu	Arg	Glu	Arg	Asp	Arg	Asp	Arg	
			1780						1785					1790			
Glu	Arg	Asp	Arg	Asp	Arg	Glu	Arg	Glu	Lys	Ser	Ile	Leu	Thr	Ser	Thr		
		1795					1800					1805					
Thr	Thr	Val	Glu	His	Ala	Pro	Ile	Trp	Arg	Pro	Gly	Thr	Glu	Gln	Ser		
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Ser	Gly	Ser	Ser	Gly	Ser	Ser	Gly	Gly	Gly	Gly	Gly	Ser	Ser	Ser	Arg		
825					1830					1835					1840		
Pro	Ala	Ser	His	Ser	His	Ala	His	Gln	His	Ser	Pro	Ile	Ser	Pro	Arg		
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Thr	Gln	Asp	Ala	Leu	Gln	Gln	Arg	Pro	Ser	Val	Leu	His	Asn	Thr	Gly		
		1860						1865					1870				
Met	Lys	Gly	Ile	Ile	Thr	Ala	Val	Glu	Pro	Ser	Lys	Pro	Thr	Val	Leu		
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Arg	Ser	Thr	Ser	Thr	Ser	Ser	Pro	Val	Arg	Pro	Ala	Ala	Thr	Phe	Pro		
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Pro	Ala	Thr	His	Cys	Pro	Leu	Gly	Gly	Thr	Leu	Asp	Gly	Val	Tyr	Pro		
905					1910					1915					1920		
Thr	Leu	Met	Glu	Pro	Val	Leu	Leu	Pro	Lys	Glu	Ala	Pro	Arg	Val	Ala		
			1925						1930					1935			
Arg	Pro	Glu	Arg	Pro	Arg	Ala	Asp	Thr	Gly	His	Ala	Phe	Leu	Ala	Lys		
		1940						1945					1950				
Pro	Pro	Ala	Arg	Ser	Gly	Leu	Glu	Pro	Ala	Ser	Ser	Pro	Ser	Lys	Gly		
		1955					1960					1965					
Ser	Glu	Pro	Arg	Pro	Leu	Val	Pro	Pro	Val	Ser	Gly	His	Ala	Thr	Ile		
	1970						1975				1980						
Ala	Arg	Thr	Pro	Ala	Lys	Asn	Leu	Ala	Pro	His	His	Ala	Ser	Pro	Asp		
985					1990					1995					2000		
Pro	Pro	Ala	Pro	Pro	Ala	Ser	Ala	Ser	Asp	Pro	His	Arg	Glu	Lys	Thr		
			2005						2010					2015			
Gln	Ser	Lys	Pro	Phe	Ser	Ile	Gln	Glu	Leu	Glu	Leu	Arg	Ser	Leu	Gly		
		2020						2025					2030				
Tyr	His	Gly	Ser	Ser	Tyr	Ser	Pro	Glu	Gly	Val	Glu	Pro	Val	Ser	Pro		
		2035					2040					2045					
Val	Ser	Ser	Pro	Ser	Leu	Thr	His	Asp	Lys	Gly	Leu	Pro	Lys	His	Leu		
	2050						2055				2060						
Glu	Glu	Leu	Asp	Lys	Ser	His	Leu	Glu	Gly	Glu	Leu	Arg	Pro	Lys	Gln		
065					2070					2075					2080		
Pro	Gly	Pro	Val	Lys	Leu	Gly	Gly	Glu	Ala	Ala	His	Leu	Pro	His	Leu		
				208													

Arg Pro Leu Pro Glu Ser Gln Pro Ser Ser Ser Pro Leu Leu Gln Thr
2100 2105 2110

Ala Pro Gly Val Lys Gly His Gln Arg Val Val Thr Leu Ala Gln His
2115 2120 2125

Ile Ser Glu Val Ile Thr Gln Asp Tyr Thr Arg His His Pro Gln Gln
2130 2135 2140

Leu Ser Ala Pro Leu Pro Ala Pro Leu Tyr Ser Phe Pro Gly Ala Ser
145 2150 2155 2160

Cys Pro Val Leu Asp Leu Arg Arg Pro Pro Ser Asp Leu Tyr Leu Pro
2165 2170 2175

Pro Pro Asp His Gly Ala Pro Ala Arg Gly Ser Pro His Ser Glu Gly
2180 2185 2190

Gly Lys Arg Ser Pro Glu Pro Asn Lys Thr Ser Val Leu Gly Gly Gly
2195 2200 2205

Glu Asp Gly Ile Glu Pro Val Ser Pro Pro Glu Gly Met Thr Glu Pro
2210 2215 2220

Gly His Ser Arg Ser Ala Val Tyr Pro Leu Leu Tyr Arg Asp Gly Glu
225 2230 2235 2240

Gln Thr Glu Pro Ser Arg Met Gly Ser Lys Ser Pro Gly Asn Thr Ser
2245 2250 2255

Gln Pro Pro Ala Phe Phe Ser Lys Leu Thr Glu Ser Asn Ser Ala Met
2260 2265 2270

Val Lys Ser Lys Lys Gln Glu Ile Asn Lys Lys Leu Asn Thr His Asn
2275 2280 2285

Arg Asn Glu Pro Glu Tyr Asn Ile Ser Gln Pro Gly Thr Glu Ile Phe
2290 2295 2300

Asn Met Pro Ala Ile Thr Gly Thr Gly Leu Met Thr Tyr Arg Ser Gln
305 2310 2315 2320

Ala Val Gln Glu His Ala Ser Thr Asn Met Gly Leu Glu Ala Ile Ile
2325 2330 2335

Arg Lys Ala Leu Met Gly Lys Tyr Asp Gln Trp Glu Glu Ser Pro Pro
2340 2345 2350

Leu Ser Ala Asn Ala Phe Asn Pro Leu Asn Ala Ser Ala Ser Leu Pro
2355 2360 2365

Ala Ala Met Pro Ile Thr Ala Ala Asp Gly Arg Ser Asp His Thr Leu
2370 2375 2380

Thr Ser Pro Gly Gly Gly Gly Lys Ala Lys Val Ser Gly Arg Pro Ser
385 2390 2395 2400

Ser Arg Lys Ala Lys Ser Pro Ala Pro Gly Leu Ala Ser Gly Asp Arg
2405 2410 2415

<400> 3																
atg	tcg	ggc	tcc	aca	cag	cct	gtg	gca	cag	acg	tgg	agg	gcc	act	gag	48
Met	Ser	Gly	Ser	Thr	Gln	Pro	Val	Ala	Gln	Thr	Trp	Arg	Ala	Thr	Glu	
1				5				10				15				
ccc	cgc	tac	ccg	ccc	cac	agc	ctt	tcc	tac	cca	gtg	cag	atc	gcc	cgg	96
Pro	Arg	Tyr	Pro	Pro	His	Ser	Leu	Ser	Tyr	Pro	Val	Gln	Ile	Ala	Arg	
20				25				30								
acg	cac	acg	gac	gtc	ggg	ctc	ctg	gag	tac	cag	cac	cac	tcc	cgc	gac	144
Thr	His	Thr	Asp	Val	Gly	Leu	Leu	Glu	Tyr	Gln	His	His	Ser	Arg	Asp	
35				40				45								
tat	gcc	tcc	cac	ctg	tcg	ccc	ggc	tcc	atc	atc	cag	ccc	cag	cgg	cgg	192
Tyr	Ala	Ser	His	Leu	Ser	Pro	Gly	Ser	Ile	Ile	Gln	Pro	Gln	Arg	Arg	
50				55				60								
agg	ccc	tcc	ctg	ctg	tct	gag	ttc	cag	ccc	ggg	aat	gaa	cgg	tcc	cag	240
Arg	Pro	Ser	Leu	Leu	Ser	Glu	Phe	Gln	Pro	Gly	Asn	Glu	Arg	Ser	Gln	
65				70				75				80				
gag	ctc	cac	ctg	cgg	cca	gag	tcc	cac	tca	tac	ctg	ccc	gag	ctg	ggg	288
Glu	Leu	His	Leu	Arg	Pro	Glu	Ser	His	Ser	Tyr	Leu	Pro	Glu	Leu	Gly	
85				90				95								
aag	tca	gag	atg	gag	ttc	att	gaa	agc	aag	cgc	cct	cgg	cta	gag	ctg	336
Lys	Ser	Glu	Met	Glu	Phe	Ile	Glu	Ser	Lys	Arg	Pro	Arg	Leu	Glu	Leu	
100				105				110								
ctg	cct	gac	ccc	ctg	ctg	cga	ccg	tca	ccc	ctg	ctg	gcc	acg	ggc	cag	384
Leu	Pro	Asp	Pro	Leu	Leu	Arg	Pro	Ser	Pro	Leu	Leu	Ala	Thr	Gly	Gln	
115				120				125								

cct gcg gga tct gaa gac ctc acc aag gac cgt agc ctg acg ggc aag	432
Pro Ala Gly Ser Glu Asp Leu Thr Lys Asp Arg Ser Leu Thr Gly Lys	
130 135 140	
ctg gaa ccg gtg tct ccc ccc agc ccc ccg cac act gac cct gag ctg	480
Leu Glu Pro Val Ser Pro Pro Ser Pro Pro His Thr Asp Pro Glu Leu	
145 150 155 160	
gag ctg gtg ccg cca cgg ctg tcc aag gag gag ctg atc cag aac atg	528
Glu Leu Val Pro Pro Arg Leu Ser Lys Glu Glu Leu Ile Gln Asn Met	
165 170 175	
gac cgc gtg gac cga gag atc acc atg gta gag cag cag atc tct aag	576
Asp Arg Val Asp Arg Glu Ile Thr Met Val Glu Gln Gln Ile Ser Lys	
180 185 190	
ctg aag aag aag cag caa cag ctg gag gag gag gct gcc aag ccg ccc	624
Leu Lys Lys Lys Gln Gln Gln Leu Glu Glu Glu Ala Ala Lys Pro Pro	
195 200 205	
gag cct gag aag ccc gtg tca ccg ccg ccc atc gag tcg aag cac cgc	672
Glu Pro Glu Lys Pro Val Ser Pro Pro Pro Ile Glu Ser Lys His Arg	
210 215 220	
agc ctg gtg cag atc atc tac gac gag aac cgg aag aag gct gaa gct	720
Ser Leu Val Gln Ile Ile Tyr Asp Glu Asn Arg Lys Lys Ala Glu Ala	
225 230 235 240	
gca cat cgg att ctg gaa ggc ctg ggg ccc cag gtg gag ctg ccg ctg	768
Ala His Arg Ile Leu Glu Gly Leu Gly Pro Gln Val Glu Leu Pro Leu	
245 250 255	
tac aac cag ccc tcc gac acc cgg cag tat cat gag aac atc aaa ata	816
Tyr Asn Gln Pro Ser Asp Thr Arg Gln Tyr His Glu Asn Ile Lys Ile	
260 265 270	
aac cag gcg atg cgg aag aag cta atc ttg tac ttc aag agg agg aat	864
Asn Gln Ala Met Arg Lys Lys Leu Ile Leu Tyr Phe Lys Arg Arg Asn	
275 280 285	
cac gct cgg aaa caa tgg gag cag aag ttc tgc cag cgc tat gac cag	912
His Ala Arg Lys Gln Trp Glu Gln Lys Phe Cys Gln Arg Tyr Asp Gln	
290 295 300	
ctc atg gag gcc tgg gag aag aag gtg gag cgc atc gag aac aac ccc	960
Leu Met Glu Ala Trp Glu Lys Lys Val Glu Arg Ile Glu Asn Asn Pro	
305 310 315 320	
cgg cgg cgg gcc aag gag agc aag gtt cgc gag tac tac gag aag cag	1008
Arg Arg Arg Ala Lys Glu Ser Lys Val Arg Glu Tyr Tyr Glu Lys Gln	
325 330 335	
ttc cct gag atc cgc aag cag cgc gag ctg cag gag cgc atg cag agg	1056
Phe Pro Glu Ile Arg Lys Gln Arg Glu Leu Gln Glu Arg Met Gln Arg	
340 345 350	
gtg ggc cag cgg ggc agt ggg ctg tcc atg tcg ccc gcc cgc agc gag	1104
Val Gly Gln Arg Gly Ser Gly Leu Ser Met Ser Pro Ala Arg Ser Glu	
355 360 365	
cac gag gtg tca gag atc atc gat ggc ctc tca gag cag gag aac ctg	1152

His	Glu	Val	Ser	Glu	Ile	Ile	Asp	Gly	Leu	Ser	Glu	Gln	Glu	Asn	Leu	
370							375				380					
gag	aag	cag	atg	cgc	cag	ctg	gcc	gtg	atc	ccg	ccc	atg	ctg	tac	gac	1200
Glu	Lys	Gln	Met	Arg	Gln	Leu	Ala	Val	Ile	Pro	Pro	Met	Leu	Tyr	Asp	
385					390					395					400	
gct	gac	cag	cag	cgc	atc	aag	ttc	atc	aac	atg	aac	ggg	ctt	atg	gcc	1248
Ala	Asp	Gln	Gln	Arg	Ile	Lys	Phe	Ile	Asn	Met	Asn	Gly	Leu	Met	Ala	
				405					410					415		
gac	ccc	atg	aag	gtg	tac	aaa	gac	cgc	cag	gtc	atg	aac	atg	tgg	agt	1296
Asp	Pro	Met	Lys	Val	Tyr	Lys	Asp	Arg	Gln	Val	Met	Asn	Met	Trp	Ser	
			420					425					430			
gag	cag	gag	aag	gag	acc	ttc	cgg	gag	aag	ttc	atg	cag	cat	ccc	aag	1344
Glu	Gln	Gln	Lys	Glu	Thr	Phe	Arg	Glu	Lys	Phe	Met	Gln	His	Pro	Lys	
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aac	ttt	ggc	ctg	atc	gca	tca	ttc	ctg	gag	agg	aag	aca	gtg	gct	gag	1392
Asn	Phe	Gly	Leu	Ile	Ala	Ser	Phe	Leu	Glu	Arg	Lys	Thr	Val	Ala	Glu	
	450					455					460					
tgc	gtc	ctc	tat	tac	tac	ctg	act	aag	aag	aat	gag	aac	tat	aag	agc	1440
Cys	Val	Leu	Tyr	Tyr	Tyr	Leu	Thr	Lys	Lys	Asn	Glu	Asn	Tyr	Lys	Ser	
465					470					475					480	
ctg	gtg	aga	cgg	agc	tat	cgg	cgc	cgc	ggc	aag	agc	cag	cag	caa	caa	1488
Leu	Val	Arg	Arg	Ser	Tyr	Arg	Arg	Arg	Gly	Lys	Ser	Gln	Gln	Gln	Gln	
				485					490					495		
cag	cag	cag	cag	cag	cag	cag	cag	cag	cag	cag	cag	cag	ccc	atg	ccc	1536
Gln	Gln	Gln	Gln	Gln	Gln	Gln	Gln	Gln	Gln	Gln	Gln	Gln	Pro	Met	Pro	
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cgc	agc	agc	cag	gag	gag	aaa	gat	gag	aag	gag	aag	gaa	aag	gag	gcg	1584
Arg	Ser	Ser	Gln	Glu	Glu	Lys	Asp	Glu	Lys	Glu	Lys	Glu	Lys	Glu	Ala	
		515					520					525				
gag	aag	gag	gag	gag	aag	ccg	gag	gtg	gag	aac	gac	aag	gaa	gac	ctc	1632
Glu	Lys	Glu	Glu	Glu	Lys	Pro	Glu	Val	Glu	Asn	Asp	Lys	Glu	Asp	Leu	
	530					535					540					
ctc	aag	gag	aag	aca	gac	gac	acc	tca	ggg	gag	gac	aac	gac	gag	aag	1680
Leu	Lys	Glu	Lys	Thr	Asp	Asp	Thr	Ser	Gly	Glu	Asp	Asn	Asp	Glu	Lys	
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Glu	Ala	Val	Ala	Ser	Lys	Gly	Arg	Lys	Thr	Ala	Asn	Ser	Gln	Gly	Arg	
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cgc	aaa	ggc	cgc	atc	acc	cgc	tca	atg	gct	aat	gag	gcc	aac	agc	gag	1776
Arg	Lys	Gly	Arg	Ile	Thr	Arg	Ser	Met	Ala	Asn	Glu	Ala	Asn	Ser	Glu	
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Glu	Ala	Ile	Thr	Pro	Gln	Gln	Ser	Ala	Glu	Leu	Ala	Ser	Met	Glu	Leu	
		595					600					605				
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Asn	Glu	Ser	Ser	Arg	Trp	Thr	Glu	Glu	Glu	Met	Glu	Thr	Ala	Lys	Lys	

102220 102220

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ggc tcc aag act gtg tgc cag tgt aag aac ttc tac ttc aac tac aag Gly Ser Lys Thr Val Ser Gln Cys Lys Asn Phe Tyr Phe Asn Tyr Lys 645 650 655			1968
aag agg cag aac ctc gat gag atc ttg cag cag cac aag ctg aag atg Lys Arg Gln Asn Leu Asp Glu Ile Leu Gln Gln His Lys Leu Lys Met 660 665 670			2016
gag aag gag agg aac gcg cgg agg aag aag aag aaa gcg ccg gcg gcg Glu Lys Glu Arg Asn Ala Arg Arg Lys Lys Lys Lys Ala Pro Ala Ala 675 680 685			2064
gcc agc gag gag gct gca ttc ccg ccc gtg gtg gag gat gag gag atg Ala Ser Glu Glu Ala Ala Phe Pro Pro Val Val Glu Asp Glu Glu Met 690 695 700			2112
gag gcg tgc ggc gtg acg gga aat gag gag gag atg gtg gag gag gct Glu Ala Ser Gly Val Thr Gly Asn Glu Glu Glu Met Val Glu Glu Ala 705 710 715 720			2160
gaa gcc act gtc aac aac agc tca gac acc gag agc atc ccc tct cct Glu Ala Thr Val Asn Asn Ser Ser Asp Thr Glu Ser Ile Pro Ser Pro 725 730 735			2208
cac act gag gcc gcc aag gac aca ggg cag aat ggg ccc aag ccc cca His Thr Glu Ala Ala Lys Asp Thr Gly Gln Asn Gly Pro Lys Pro Pro 740 745 750			2256
gcc acc ctg ggc gcc gac ggg cca ccc cca ggg cca ccc acc cca cca Ala Thr Leu Gly Ala Asp Gly Pro Pro Pro Gly Pro Pro Thr Pro Pro 755 760 765			2304
ccg gag gac atc ccg gcc ccc act gag tcc acc ccg gcc tct gaa gcc Pro Glu Asp Ile Pro Ala Pro Thr Glu Ser Thr Pro Ala Ser Glu Ala 770 775 780			2352
acc tta gcc cct acg ccc cca cca gca ccc cca ttt ccc tct tca cct Thr Leu Ala Pro Thr Pro Pro Pro Ala Pro Pro Phe Pro Ser Ser Pro 785 790 795 800			2400
cct cct gtg gtc ccc aag gag gag aag gag gag gag acc gca gca gcg Pro Pro Val Val Pro Lys Glu Glu Lys Glu Glu Glu Thr Ala Ala Ala 805 810 815			2448
ccc cca gtg gag gag ggg gag gag cag aag ccc ccc gcg gct gag gag Pro Pro Val Glu Glu Gly Glu Glu Gln Lys Pro Pro Ala Ala Glu Glu 820 825 830			2496
ctg gca gtg gac aca ggg aag gcc gag gag ccc gtc aag agc gag tgc Leu Ala Val Asp Thr Gly Lys Ala Glu Glu Pro Val Lys Ser Glu Cys 835 840 845			2544
acg gag gaa gcc gag gag ggg ccg gcc aag ggc aag gac gcg gag gcc Thr Glu Glu Ala Glu Glu Gly Pro Ala Lys Gly Lys Asp Ala Glu Ala 850 855 860			2592

gct gag gcc acg gcc gag agg gcg ctc aag gca gag aag aag gag ggc	2640
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ggg agc ggc agg gcc acc aca gcc aag agc tcg ggc gcc ccc cag gac	2688
Gly Ser Gly Arg Ala Thr Thr Ala Lys Ser Ser Gly Ala Pro Gln Asp	
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Ser Asp Ser Ser Ala Thr Cys Ser Ala Asp Glu Val Asp Glu Ala Glu	
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Pro Thr Gly Asp Pro Arg Ala Asn Ala Ser Pro Gln Lys Pro Leu Asp	
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Leu Lys Gln Leu Lys Gln Arg Ala Ala Ala Ile Pro Pro Ile Gln Val	
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Thr Lys Val His Glu Pro Pro Arg Glu Asp Ala Ala Pro Thr Lys Pro	
965 970 975	
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Ala Pro Pro Ala Pro Pro Pro Pro Gln Asn Leu Gln Pro Glu Ser Asp	
980 985 990	
gcc cct cag cag cct ggc agc agc ccc cgg ggc aag agc agg agc ccg	3024
Ala Pro Gln Gln Pro Gly Ser Ser Pro Arg Gly Lys Ser Arg Ser Pro	
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Ala Pro Pro Ala Asp Lys Glu Ala Glu Lys Pro Val Phe Phe Pro Ala	
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Phe Ala Ala Glu Ala Gln Lys Leu Pro Gly Asp Pro Pro Cys Trp Thr	
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Ser Gly Leu Pro Phe Pro Val Pro Pro Arg Glu Val Ile Lys Ala Ser	
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ccg cat gcc ccg gac ccc tca gcc ttc tcc tac gct cca cct ggt cac	3216
Pro His Ala Pro Asp Pro Ser Ala Phe Ser Tyr Ala Pro Pro Gly His	
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cca ctg ccc ctg ggc ctc cat gac act gcc cgg ccc gtc ctg ccg cgc	3264
Pro Leu Pro Leu Gly Leu His Asp Thr Ala Arg Pro Val Leu Pro Arg	
1075 1080 1085	
cca ccc acc atc tcc aac ccg cct ccc ctc atc tcc tct gcc aag cac	3312
Pro Pro Thr Ile Ser Asn Pro Pro Pro Leu Ile Ser Ser Ala Lys His	
1090 1095 1100	

ccc agc gtc ctc gag agg caa ata ggt gcc atc tcc caa gga atg tcg	3360
Pro Ser Val Leu Glu Arg Gln Ile Gly Ala Ile Ser Gln Gly Met Ser	
1105 1110 1115 1120	
gtc cag ctc cac gtc ccg tac tca gag cat gcc aag gcc ccg gtg ggc	3408
Val Gln Leu His Val Pro Tyr Ser Glu His Ala Lys Ala Pro Val Gly	
1125 1130 1135	
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Pro Val Thr Met Gly Leu Pro Leu Pro Met Asp Pro Lys Lys Leu Ala	
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Gly Pro Pro Glu Ser Leu Gly Val Pro Thr Ala Gln Glu Ala Ser Val	
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Ile Thr Arg Ile Ile Gly Glu Asp Ser Pro Ser Arg Leu Asp Arg Gly	
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Gly His Val Leu Ser Tyr Glu Gly Gly Met Ser Val Thr Gln Cys Ser	
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Lys Glu Asp Gly Arg Ser Ser Ser Gly Pro Pro His Glu Thr Ala Ala	
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Pro Lys Arg Thr Tyr Asp Met Met Glu Gly Arg Val Gly Arg Ala Ile	
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Ser Ser Ala Ser Ile Glu Gly Leu Met Gly Arg Ala Ile Pro Pro Glu	
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Pro Pro Pro Ser Arg Asp Leu Thr Glu Ala Tyr Lys Thr Gln Ala Leu	
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Gly Pro Leu Lys Leu Lys Pro Ala His Glu Gly Leu Val Ala Thr Val	
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Lys Glu Ala Gly Arg Ser Ile His Glu Ile Pro Arg Glu Glu Leu Arg	
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Leu Asp Ala Ala Ala Ala Tyr Tyr Leu Pro Arg His Leu Ala Pro Asn	1635	1640	1645	
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Pro Thr Tyr Pro His Leu Tyr Pro Pro Tyr Leu Ile Arg Gly Tyr Pro	1650	1655	1660	
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Asn Tyr Ala Ala Gly Pro Arg Gly Ile Ile Asp Leu Ser Gln Val Pro	1715	1720	1725	
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His Leu Pro Val Leu Val Pro Pro Thr Pro Gly Thr Pro Ala Thr Ala	1730	1735	1740	
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Lys Pro Thr Thr Thr Ser Ser Ser Glu Arg Glu Arg Asp Arg Asp Arg	1780	1785	1790	
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Met Ser Gly Ser Thr																
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Trp	Glu	Lys	Lys	Val	Glu	Arg	Ile	Glu	Asn	Asn	Pro	Arg	Arg	Arg	Ala	
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Lys	Glu	Ser	Lys	Val	Arg	Glu	Tyr	Tyr	Glu	Lys	Gln	Phe	Pro	Glu	Ile	
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Asp	Thr	Phe	Arg	Glu	Lys	Phe	Met	Gln	His	Pro	Lys	Asn	Phe	Gly	Leu	
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Gln Gln Gln Gln Gln Gln Met Ala Arg Ser Ser Gln Glu Glu Lys Glu							
		505		510		515	
gag aag gag aag gag aag gag gcc gac aag gag gaa gag aag cag gat							1758
Glu Lys Glu Lys Glu Lys Glu Ala Asp Lys Glu Glu Glu Lys Gln Asp							
		520		525		530	
gcg gag aac gag aag gaa gaa ctc agc aag gag aag aca gac gac act							1806
Ala Glu Asn Glu Lys Glu Glu Leu Ser Lys Glu Lys Thr Asp Asp Thr							
		535		540		545	
tct ggc gag gac aac gat gag aaa gag gcc gtg gcc tcc aaa ggc cgc							1854
Ser Gly Glu Asp Asn Asp Glu Lys Glu Ala Val Ala Ser Lys Gly Arg							
		550		555		560	565
aaa act gcc aac agc caa ggc cgc cgc aaa ggc cgt atc acg cgc tcc							1902
Lys Thr Ala Asn Ser Gln Gly Arg Arg Lys Gly Arg Ile Thr Arg Ser							
		570		575		580	
atg gcc aac gag gcc aac cat gag gag aca gcc acc cca cag caa agt							1950
Met Ala Asn Glu Ala Asn His Glu Glu Thr Ala Thr Pro Gln Gln Ser							
		585		590		595	
tca gag ctg gct tcc atg gag atg aac gag agt tct cgc tgg act gag							1998
Ser Glu Leu Ala Ser Met Glu Met Asn Glu Ser Ser Arg Trp Thr Glu							
		600		605		610	
gaa gag atg gag aca gca aag aaa ggc ctc ctg gaa cat ggg agg aac							2046
Glu Glu Met Glu Thr Ala Lys Lys Gly Leu Leu Glu His Gly Arg Asn							
		615		620		625	
tgg tca gcc att gcc cgc atg gtg ggc tcc aag acc gtg tcc cag tgt							2094
Trp Ser Ala Ile Ala Arg Met Val Gly Ser Lys Thr Val Ser Gln Cys							
		630		635		640	645
aag aac ttc tac ttc aac tac aag aag agg cag aac ctg gac gaa atc							2142
Lys Asn Phe Tyr Phe Asn Tyr Lys Lys Arg Gln Asn Leu Asp Glu Ile							
		650		655		660	
ctt cag cag cac aag cta aag atg gag aag gag agg aac gct cgg agg							2190
Leu Gln Gln His Lys Leu Lys Met Glu Lys Glu Arg Asn Ala Arg Arg							
		665		670		675	
aag aag aag aag acc cca gct gcg gcg agc gag gag aca gcc ttc cca							2238
Lys Lys Lys Lys Thr Pro Ala Ala Ser Glu Glu Thr Ala Phe Pro							
		680		685		690	
cct gcc gct gag gac gaa gag atg gaa gca tca ggc gca agt gcc aat							2286
Pro Ala Ala Glu Asp Glu Glu Met Glu Ala Ser Gly Ala Ser Ala Asn							
		695		700		705	
gag gaa gag ctg gcg gag gag gca gaa gcc tca cag gcc tct ggg aat							2334
Glu Glu Glu Leu Ala Glu Glu Ala Glu Ala Ser Gln Ala Ser Gly Asn							
		710		715		720	725

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gag gtt ccc aga gtt ggg gag tgc agt ggc cca gct gct gtc aac aac	2382
Glu Val Pro Arg Val Gly Glu Cys Ser Gly Pro Ala Ala Val Asn Asn	
730 735 740	
agc tct gat act gag agt gtc cca tcc ccg cgt tca gaa gcc acg aag	2430
Ser Ser Asp Thr Glu Ser Val Pro Ser Pro Arg Ser Glu Ala Thr Lys	
745 750 755	
gac act ggg cct aaa ccc act ggc act gaa gca ttg ccc gct gcc acc	2478
Asp Thr Gly Pro Lys Pro Thr Gly Thr Glu Ala Leu Pro Ala Ala Thr	
760 765 770	
cag cca cct gtt cct cct cca gaa gaa ccg gca gca gcc cct gct gag	2526
Gln Pro Pro Val Pro Pro Pro Glu Glu Pro Ala Ala Ala Pro Ala Glu	
775 780 785	
ccc tcc cca gtc cct gat gcc agt ggc cca cca tcc cca gag cct tcc	2574
Pro Ser Pro Val Pro Asp Ala Ser Gly Pro Pro Ser Pro Glu Pro Ser	
790 795 800 805	
cca tca cct gcc gca ccc ccg gct act gtg gac aag gat gaa caa gaa	2622
Pro Ser Pro Ala Ala Pro Pro Ala Thr Val Asp Lys Asp Glu Gln Glu	
810 815 820	
gcc ccg gct gct cca gct ccc cag aca gaa gat gcc aag gag cag aag	2670
Ala Pro Ala Ala Pro Ala Pro Gln Thr Glu Asp Ala Lys Glu Gln Lys	
825 830 835	
tct gag gcc gag gag atc gat gtg gga aag cca gag gag ccc gag gcc	2718
Ser Glu Ala Glu Glu Ile Asp Val Gly Lys Pro Glu Glu Pro Glu Ala	
840 845 850	
tct gag gag ccc ccg gag agt gta aag agt gac cac aag gag gag acc	2766
Ser Glu Glu Pro Pro Glu Ser Val Lys Ser Asp His Lys Glu Glu Thr	
855 860 865	
gag gaa gag cct gaa gac aaa gcc aag ggc aca gag gcc att gaa act	2814
Glu Glu Glu Pro Glu Asp Lys Ala Lys Gly Thr Glu Ala Ile Glu Thr	
870 875 880 885	
gtg tct gag gca cca ctt aag gtg gag gag gct ggt agc aag gca gct	2862
Val Ser Glu Ala Pro Leu Lys Val Glu Glu Ala Gly Ser Lys Ala Ala	
890 895 900	
gtg acc aag ggt tcc agc tca ggt gcc acc cag gac agt gac tcc agt	2910
Val Thr Lys Gly Ser Ser Ser Gly Ala Thr Gln Asp Ser Asp Ser Ser	
905 910 915	
gcc acc tgc agt gcc gat gag gtg gac gaa ccc gaa gga ggt gac aag	2958
Ala Thr Cys Ser Ala Asp Glu Val Asp Glu Pro Glu Gly Gly Asp Lys	
920 925 930	
ggc agg ctg ctg tca cca agg ccc agc ctc ctc acc ccg gct gga gat	3006
Gly Arg Leu Leu Ser Pro Arg Pro Ser Leu Leu Thr Pro Ala Gly Asp	
935 940 945	
ccc ccg gcc agt acc tcg ccc cag aag ccg ctg gac ctg aag cag ctg	3054
Pro Arg Ala Ser Thr Ser Pro Gln Lys Pro Leu Asp Leu Lys Gln Leu	
950 955 960 965	

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aag cag cga gca gcc gcc atc ccc cct atc gtc acc aag gtc cat gag Lys Gln Arg Ala Ala Ala Ile Pro Pro Ile Val Thr Lys Val His Glu 970 975 980	3102
ccc ccc cgg gag gac aca gta ccc cca aag cca gtt ccc cct gtg cct Pro Pro Arg Glu Asp Thr Val Pro Pro Lys Pro Val Pro Pro Val Pro 985 990 995	3150
cca ccc acg cag cac cta cag cca gag ggt gac gtg tct cag cag tcg Pro Pro Thr Gln His Leu Gln Pro Glu Gly Asp Val Ser Gln Gln Ser 1000 1005 1010	3198
gga gga agt cca cgt ggc aag tcc cgc agc cca gtg cct cct gcc gag Gly Gly Ser Pro Arg Gly Lys Ser Arg Ser Pro Val Pro Pro Ala Glu 1015 1020 1025	3246
aaa gag gca gag aaa ccc gca ttc ttt ccg gct ttc cca act gag ggc Lys Glu Ala Glu Lys Pro Ala Phe Phe Pro Ala Phe Pro Thr Glu Gly 1030 1035 1040 1045	3294
caa agc tac cga ctg agc ccc cac gct ggt cat cgg ctg cct tcc cat Gln Ser Tyr Arg Leu Ser Pro His Ala Gly His Arg Leu Pro Ser His 1050 1055 1060	3342
cct cca cgg gag gtg atc aag act tcc aca cgc gct gac cct ctc ttc Pro Pro Arg Glu Val Ile Lys Thr Ser Thr Arg Ala Asp Pro Leu Phe 1065 1070 1075	3390
tcc tac aca ccc ccc ggt cac ccg ctg cct ctg ggc ctc cac gat agt Ser Tyr Thr Pro Pro Gly His Pro Leu Pro Leu Gly Leu His Asp Ser 1080 1085 1090	3438
gcc cgg ccc gtc ctg cca cgt ccc ccc atc tct aac ccc cca ccc ctc Ala Arg Pro Val Leu Pro Arg Pro Pro Ile Ser Asn Pro Pro Pro Leu 1095 1100 1105	3486
atc tcc tct gcc aag cat ccc ggc gta ctt gag agg cag ctg ggt gcc Ile Ser Ser Ala Lys His Pro Gly Val Leu Glu Arg Gln Leu Gly Ala 1110 1115 1120 1125	3534
atc tcc cag ggg atg tca gtc cag ctt cgt gtg cct cac tca gag cat Ile Ser Gln Gly Met Ser Val Gln Leu Arg Val Pro His Ser Glu His 1130 1135 1140	3582
gcc aag ccc atg ggc cct ctc acc atg gag ctg ccc ctt gcc gtg gac Ala Lys Pro Met Gly Pro Leu Thr Met Glu Leu Pro Leu Ala Val Asp 1145 1150 1155	3630
cct aag aag ctg ggg aca gca ctg gct ccg cca cca gtg gaa gca tca Pro Lys Lys Leu Gly Thr Ala Leu Ala Pro Pro Pro Val Glu Ala Ser 1160 1165 1170	3678
cca agg gcc tcc cag tac ccg ggc tgc aga cgg ccc cag cta cag agg Pro Arg Ala Ser Gln Tyr Pro Gly Cys Arg Arg Pro Gln Leu Gln Arg 1175 1180 1185	3726
ctc tat cac cca cgc acg ccc gca gac gtc ctc tac aag ggt acc atc Leu Tyr His Pro Arg Thr Pro Ala Asp Val Leu Tyr Lys Gly Thr Ile 1190 1195 1200 1205	3774
agc agg atc gtc ggt gag gac agc cca agt cgc ctt gac cgg gca cga	3822

102220 1016100

Ser Arg Ile Val Gly Glu Asp Ser Pro Ser Arg Leu Asp Arg Ala Arg	
1210 1215 1220	
gag gac acc ctg ccc aag ggc cat gtc atc tat gag ggc aag aaa ggc	3870
Glu Asp Thr Leu Pro Lys Gly His Val Ile Tyr Glu Gly Lys Lys Gly	
1225 1230 1235	
cac gtc cta tcc tat gaa ggt ggt atg tcc gtg tca cag tgc tct aag	3918
His Val Leu Ser Tyr Glu Gly Gly Met Ser Val Ser Gln Cys Ser Lys	
1240 1245 1250	
gag gat gga agg agc agc tcg ggc cca ccc cat gag act gcc gcc cct	3966
Glu Asp Gly Arg Ser Ser Ser Gly Pro Pro His Glu Thr Ala Ala Pro	
1255 1260 1265	
aaa cgc acc tat gac atg atg gag ggc cgt gta ggc agg act gtc acc	4014
Lys Arg Thr Tyr Asp Met Met Glu Gly Arg Val Gly Arg Thr Val Thr	
1270 1275 1280 1285	
tca gcc agc ata gag gga ctc atg ggc cgc gcc atc cct gag cag cac	4062
Ser Ala Ser Ile Glu Gly Leu Met Gly Arg Ala Ile Pro Glu Gln His	
1290 1295 1300	
agc ccc cac ctc aag gag cag cat cac atc cga ggc tcc atc acg caa	4110
Ser Pro His Leu Lys Glu Gln His His Ile Arg Gly Ser Ile Thr Gln	
1305 1310 1315	
ggc atc ccg agg tcc tat gtg gag gcg cag gag gac tac tta cgg cgg	4158
Gly Ile Pro Arg Ser Tyr Val Glu Ala Gln Glu Asp Tyr Leu Arg Arg	
1320 1325 1330	
gag gcc aag ctc ttg aag cga gaa ggg aca cca cct ccc cca cca cca	4206
Glu Ala Lys Leu Leu Lys Arg Glu Gly Thr Pro Pro Pro Pro Pro	
1335 1340 1345	
cct cgg gac ctg act gag acc tac aag ccc cgg ccc ctg gac cct ctg	4254
Pro Arg Asp Leu Thr Glu Thr Tyr Lys Pro Arg Pro Leu Asp Pro Leu	
1350 1355 1360 1365	
ggt ccc ctg aag ctg aag ccg act cac gag ggt gtg gta gca act gtg	4302
Gly Pro Leu Lys Leu Lys Pro Thr His Glu Gly Val Val Ala Thr Val	
1370 1375 1380	
aag gag gcg ggc cgc tct atc cat gag atc ccg aga gag gag ctg cgc	4350
Lys Glu Ala Gly Arg Ser Ile His Glu Ile Pro Arg Glu Glu Leu Arg	
1385 1390 1395	
cgc aca cct gag cta ccc ctg gca cca cgg cct ctg aag gag ggt tcc	4398
Arg Thr Pro Glu Leu Pro Leu Ala Pro Arg Pro Leu Lys Glu Gly Ser	
1400 1405 1410	
atc acc cag ggc acc cca ctc aag tac gac tct ggg gca ccc tcc act	4446
Ile Thr Gln Gly Thr Pro Leu Lys Tyr Asp Ser Gly Ala Pro Ser Thr	
1415 1420 1425	
ggc acc aag aaa cac gac gtg cgc tcc atc atc ggc agc ccc ggc cgg	4494
Gly Thr Lys Lys His Asp Val Arg Ser Ile Ile Gly Ser Pro Gly Arg	
1430 1435 1440 1445	
cct ttc cct gcc ctg cac ccg ctg gac ata atg gct gac gcc cgg gca	4542
Pro Phe Pro Ala Leu His Pro Leu Asp Ile Met Ala Asp Ala Arg Ala	

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1450							1455							1460							
ctg	gag	cgt	gcc	tgc	tat	gaa	gag	agt	ctg	aag	agc	cgg	tca	ggg	acc	4590					
Leu	Glu	Arg	Ala	Cys	Tyr	Glu	Glu	Ser	Leu	Lys	Ser	Arg	Ser	Gly	Thr						
			1465					1470					1475								
agc	agt	ggg	gca	ggg	ggc	tcc	atc	aca	cgt	ggg	gct	cca	gtc	gtc	gtg	4638					
Ser	Ser	Gly	Ala	Gly	Gly	Ser	Ile	Thr	Arg	Gly	Ala	Pro	Val	Val	Val						
			1480					1485					1490								
cct	gaa	ctg	ggc	aag	cca	cgg	caa	agc	cca	ctg	act	tac	gaa	gac	cac	4686					
Pro	Glu	Leu	Gly	Lys	Pro	Arg	Gln	Ser	Pro	Leu	Thr	Tyr	Glu	Asp	His						
			1495					1500					1505								
ggg	gca	ccc	ttc	acc	agt	cac	ctg	cca	cgt	ggc	tcc	cct	gtg	acc	acg	4734					
Gly	Ala	Pro	Phe	Thr	Ser	His	Leu	Pro	Arg	Gly	Ser	Pro	Val	Thr	Thr						
1510						1515					1520		1525								
agg	gag	ccc	acg	cca	cgc	ctt	cag	gaa	ggc	agc	ctc	cta	tcc	agc	aag	4782					
Arg	Glu	Pro	Thr	Pro	Arg	Leu	Gln	Glu	Gly	Ser	Leu	Leu	Ser	Ser	Lys						
			1530					1535					1540								
gcg	tcc	cag	gac	cgg	aag	ctg	aca	tct	aca	ccc	cgg	gag	atc	gcc	aag	4830					
Ala	Ser	Gln	Asp	Arg	Lys	Leu	Thr	Ser	Thr	Pro	Arg	Glu	Ile	Ala	Lys						
			1545					1550					1555								
tcc	cca	cac	agc	act	gtg	ccc	gag	cac	cac	cct	cac	ccc	atc	tcc	ccc	4878					
Ser	Pro	His	Ser	Thr	Val	Pro	Glu	His	His	Pro	His	Pro	Ile	Ser	Pro						
			1560					1565					1570								
tat	gag	cac	ttg	ctc	cgg	ggc	gtg	act	ggg	gtg	gac	ctg	tac	cgt	ggg	4926					
Tyr	Glu	His	Leu	Leu	Arg	Gly	Val	Thr	Gly	Val	Asp	Leu	Tyr	Arg	Gly						
			1575					1580					1585								
cac	atc	cca	ttg	gcc	ttt	gac	ccc	acc	tcc	ata	ccc	cga	ggg	atc	cct	4974					
His	Ile	Pro	Leu	Ala	Phe	Asp	Pro	Thr	Ser	Ile	Pro	Arg	Gly	Ile	Pro						
1590						1595					1600		1605								
ctg	gaa	gca	gca	gcc	gca	gcc	tac	tac	ctg	ccc	cgg	cac	ttg	gcc	ccc	5022					
Leu	Glu	Ala	Ala	Ala	Ala	Ala	Tyr	Tyr	Leu	Pro	Arg	His	Leu	Ala	Pro						
			1610					1615					1620								
agc	ccc	acc	tac	cca	cac	ctg	tac	cca	cct	tac	ctc	atc	cgc	ggc	tac	5070					
Ser	Pro	Thr	Tyr	Pro	His	Leu	Tyr	Pro	Pro	Tyr	Leu	Ile	Arg	Gly	Tyr						
			1625					1630					1635								
cct	gac	acg	gcg	gcc	ctg	gag	aac	cgc	cag	acc	atc	atc	aat	gac	tac	5118					
Pro	Asp	Thr	Ala	Ala	Leu	Glu	Asn	Arg	Gln	Thr	Ile	Ile	Asn	Asp	Tyr						
			1640					1645					1650								
atc	acc	tcg	cag	cag	atg	cac	cac	aac	gct	gcc	tcc	gcc	atg	gcc	cag	5166					
Ile	Thr	Ser	Gln	Gln	Met	His	His	Asn	Ala	Ala	Ser	Ala	Met	Ala	Gln						
			1655					1660					1665								
cgt	gct	gac	atg	ctg	agg	ggg	ctg	tca	ccg	cga	gag	tcc	tcg	ctg	gcc						

cca	cac	ctg	ccc	gtg	ctg	gtg	cca	cca	acg	cca	ggc	acc	cct	gcc	acc	5310
Pro	His	Leu	Pro	Val	Leu	Val	Pro	Pro	Thr	Pro	Gly	Thr	Pro	Ala	Thr	
		1705						1710					1715			
gcc	atc	gac	cgc	ctt	gcc	tac	ctc	ccc	act	gcg	ccc	cca	ccc	ttc	agc	5358
Ala	Ile	Asp	Arg	Leu	Ala	Tyr	Leu	Pro	Thr	Ala	Pro	Pro	Pro	Phe	Ser	
		1720					1725					1730				
agc	cgc	cac	agt	agc	tca	ccg	ctg	tcc	cca	gga	ggc	ccc	act	cac	cta	5406
Ser	Arg	His	Ser	Ser	Ser	Pro	Leu	Ser	Pro	Gly	Gly	Pro	Thr	His	Leu	
		1735					1740				1745					
gct	aaa	cca	act	gcc	aca	tct	tca	tcg	gag	cgg	gaa	cgg	gaa	cgt	gag	5454
Ala	Lys	Pro	Thr	Ala	Thr	Ser	Ser	Ser	Glu	Arg	Glu	Arg	Glu	Arg	Glu	
1750					1755				1760						1765	
cgg	gaa	cga	gac	aag	tcc	atc	ctc	acg	tct	acc	act	aca	gtg	gag	cat	5502
Arg	Glu	Arg	Asp	Lys	Ser	Ile	Leu	Thr	Ser	Thr	Thr	Thr	Val	Glu	His	
			1770					1775						1780		
gca	ccc	atc	tgg	aga	cct	ggc	acg	gag	cag	agc	agc	ggg	gct	ggg	ggc	5550
Ala	Pro	Ile	Trp	Arg	Pro	Gly	Thr	Glu	Gln	Ser	Ser	Gly	Ala	Gly	Gly	
		1785					1790					1795				
agc	agc	cgc	ccc	gcc	tcc	cac	acc	cac	cag	cac	tcg	ccc	atc	tcc	ccc	5598
Ser	Ser	Arg	Pro	Ala	Ser	His	Thr	His	Gln	His	Ser	Pro	Ile	Ser	Pro	
		1800					1805					1810				
cgg	acc	cag	gac	gcc	ttg	cag	cag	agg	ccc	agt	gtg	ctg	cac	aac	acg	5646
Arg	Thr	Gln	Asp	Ala	Leu	Gln	Gln	Arg	Pro	Ser	Val	Leu	His	Asn	Thr	
		1815				1820					1825					
agc	atg	aag	ggc	gtg	gtc	acc	tcc	gtg	gaa	ccc	ggc	acg	ccc	acg	gtc	5694
Ser	Met	Lys	Gly	Val	Val	Thr	Ser	Val	Glu	Pro	Gly	Thr	Pro	Thr	Val	
1830					1835				1840						1845	
ctg	agg	tcc	acc	tcc	acc	tct	tcg	cct	gtc	cgc	cca	gct	gcc	aca	ttc	5742
Leu	Arg	Ser	Thr	Ser	Thr	Ser	Ser	Pro	Val	Arg	Pro	Ala	Ala	Thr	Phe	
				1850				1855						1860		
cca	cct	gcc	acc	cac	tgc	cca	ctt	ggc	ggc	acc	ctt	gaa	ggg	gtc	tac	5790
Pro	Pro	Ala	Thr	His	Cys	Pro	Leu	Gly	Gly	Thr	Leu	Glu	Gly	Val	Tyr	
		1865					1870					1875				
cct	acc	ctc	atg	gag	ccc	gtc	ctg	tta	ccc	aag	gag	acc	tct	cgg	gtc	5838
Pro	Thr	Leu	Met	Glu	Pro	Val	Leu	Leu	Pro	Lys	Glu	Thr	Ser	Arg	Val	
		1880					1885					1890				
gcc	cgg	ccc	gag	cgg	ccc	cgt	gtg	gac	ggc	ggc	cat	gcc	ttc	ctc	acc	5886
Ala	Arg	Pro	Glu	Arg	Pro	Arg	Val	Asp	Gly	Gly	His	Ala	Phe	Leu	Thr	
		1895				1900					1905					
aaa	ccc	ccg	gcc	cgg	gag	ccc	gcc	tcc								

acc cca gca aag agc ctt gca ccc cac cat gcc agt ccg gac ccg ccg	6030
Thr Pro Ala Lys Ser Leu Ala Pro His His Ala Ser Pro Asp Pro Pro	
1945 1950 1955	
ggg ccc acc tcg gcc tca gat ctg cac cga gaa aag act caa agt aaa	6078
Gly Pro Thr Ser Ala Ser Asp Leu His Arg Glu Lys Thr Gln Ser Lys	
1960 1965 1970	
ccc ttt tcc atc cag gaa ttg gaa ctc cgt tct ctg ggt tac cac agt	6126
Pro Phe Ser Ile Gln Glu Leu Glu Leu Arg Ser Leu Gly Tyr His Ser	
1975 1980 1985	
gga gct ggc tac agc ccc gat ggg gtg gag ccc atc agc ccg gtg agc	6174
Gly Ala Gly Tyr Ser Pro Asp Gly Val Glu Pro Ile Ser Pro Val Ser	
1990 1995 2000 2005	
tcc ccc agc ctg acc cac gac aag ggg ctc tcc aaa cct ctg gaa gag	6222
Ser Pro Ser Leu Thr His Asp Lys Gly Leu Ser Lys Pro Leu Glu Glu	
2010 2015 2020	
cta gag aag agc cac ttg gaa ggg gag ctg cgg cac aag cag cca ggc	6270
Leu Glu Lys Ser His Leu Glu Gly Glu Leu Arg His Lys Gln Pro Gly	
2025 2030 2035	
ccc atg aag ctc agc gcg gag gct gcc cat ctc cca cat ctg cgg cca	6318
Pro Met Lys Leu Ser Ala Glu Ala His Leu Pro His Leu Arg Pro	
2040 2045 2050	
ctg ccc gag agc cag ccc tca tcc agc cca ctc ctc cag act gcc cca	6366
Leu Pro Glu Ser Gln Pro Ser Ser Ser Pro Leu Leu Gln Thr Ala Pro	
2055 2060 2065	
ggc atc aaa ggt cac cag agg gtg gtc acc ctg gct cag cac atc agc	6414
Gly Ile Lys Gly His Gln Arg Val Val Thr Leu Ala Gln His Ile Ser	
2070 2075 2080 2085	
gag gtc att acg cag gac tac acc cgg cac cac ccg cag cag ctc agt	6462
Glu Val Ile Thr Gln Asp Tyr Thr Arg His His Pro Gln Gln Leu Ser	
2090 2095 2100	
ggc ccc ctt ccc gcc cct ctc tac tcc ttt ccc gga gcc agc tgc cct	6510
Gly Pro Leu Pro Ala Pro Leu Tyr Ser Phe Pro Gly Ala Ser Cys Pro	
2105 2110 2115	
gtg ctg gat ctt cgc cgc cca ccc agt gac ctc tac ctc cca ccc ccc	6558
Val Leu Asp Leu Arg Arg Pro Pro Ser Asp Leu Tyr Leu Pro Pro Pro	
2120 2125 2130	
gac cat ggc acc cca gcc cgg gga tcc ccc cac agt gaa ggg ggc aaa	6606
Asp His Gly Thr Pro Ala Arg Gly Ser Pro His Ser Glu Gly Gly Lys	
2135 2140 2145	
agg tcc cca gaa ccc agc aaa aca tcg gtc ctg ggc agc agt gag gat	6654
Arg Ser Pro Glu Pro Ser Lys Thr Ser Val Leu Gly Ser Ser Glu Asp	
2150 2155 2160 2165	
gcc att gag cct gtg tcc cca cca gag ggc atg act gag cca gga cat	6702
Ala Ile Glu Pro Val Ser Pro Pro Glu Gly Met Thr Glu Pro Gly His	
2170 2175 2180	
gct cgg agc gct gtg tac cca ctg ctg tat cga gac ggg gaa cag ggc	6750

6030 6078 6126 6174 6222 6270 6318 6366 6414 6462 6510 6558 6606 6654 6702 6750

Ala	Arg	Ser	Ala	Val	Tyr	Pro	Leu	Leu	Tyr	Arg	Asp	Gly	Glu	Gln	Gly		
2185						2190						2195					
gag	ccc	agg	atg	ggc	tct	aag	tct	cca	ggc	aac	acc	agc	cag	ccg	cca	6798	
Glu	Pro	Arg	Met	Gly	Ser	Lys	Ser	Pro	Gly	Asn	Thr	Ser	Gln	Pro	Pro		
2200						2205						2210					
gcc	ttc	ttc	agt	aag	ctg	act	gag	agc	aac	tcc	gcc	atg	gtg	aag	tcg	6846	
Ala	Phe	Phe	Ser	Lys	Leu	Thr	Glu	Ser	Asn	Ser	Ala	Met	Val	Lys	Ser		
2215						2220						2225					
aag	aag	cag	gag	atc	aac	aag	aaa	ctc	aac	acc	cac	aac	cgg	aac	gag	6894	
Lys	Lys	Gln	Glu	Ile	Asn	Lys	Lys	Leu	Asn	Thr	His	Asn	Arg	Asn	Glu		
2230						2235						2240			2245		
cca	gaa	tac	aat	att	ggc	cag	cct	ggg	acg	gaa	atc	ttc	aac	atg	ccc	6942	
Pro	Glu	Tyr	Asn	Ile	Gly	Gln	Pro	Gly	Thr	Glu	Ile	Phe	Asn	Met	Pro		
			2250						2255						2260		
gcc	atc	act	gga	gca	ggc	ctt	atg	acc	tgt	aga	agc	cag	gcg	gtg	caa	6990	
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Ser	His	Thr	Asp	Val	Gly	Leu	Leu	Glu	Tyr	Gln	His	His	Pro	Arg	Asp		
		35					40					45					
tac	acc	tca	cac	ctg	tca	ccc	ggt	tcc	atc	atc	cag	cca	cag	agg	agg		192
Tyr	Thr	Ser	His	Leu	Ser	Pro	Gly	Ser	Ile	Ile	Gln	Pro	Gln	Arg	Arg		
	50					55					60						
cgg	ccc	tca	ctg	ctg	tca	gag	ttc	cag	cct	ggg	agt	gaa	cgg	tct	cag		240
Arg	Pro	Ser	Leu	Leu	Ser	Glu	Phe	Gln	Pro	Gly	Ser	Glu	Arg	Ser	Gln		
65					70				75						80		
gag	ctc	cac	ctg	cgc	cct	gag	tcc	cgc	acg	ttc	ctg	cct	gag	ctg	ggc		288
Glu	Leu	His	Leu	Arg	Pro	Glu	Ser	Arg	Thr	Phe	Leu	Pro	Glu	Leu	Gly		
				85				90						95			
aaq	ccc	gac	ata	gaa	ttc	acc	gag	agc	aaq	cgc	ccc	cgc	ctg	gag	cta		336

[illegible]

			340				345				350							
agc Ser	agg Arg	gtg Val 355	ggc Gly	cag Gln	cgt Arg	ggc Gly	agt Ser 360	ggg Gly	ctc Leu	tcc Ser	atg Met	tcg Ser 365	gct Ala	gcc Ala	cgc Arg	1104		
agt Ser	gag Glu 370	cat His	gag Glu	gtt Val	tct Ser	gag Glu 375	atc Ile	att Ile	gat Asp	ggc Gly	ttg Leu 380	tct Ser	gag Glu	cag Gln	gag Glu	1152		
aac Asn 385	ctg Leu	gag Glu	aag Lys	cag Gln	atg Met 390	cgc Arg	cag Gln	ctg Leu	gcc Ala	gtg Val 395	atc Ile	cgc Arg	cat His	gtt Val	gta Val 400	1200		
cga Arg	cgc Arg	gac Asp	cag Gln	cag Gln 405	agg Arg	atc Ile	aag Lys	ttc Phe	atc Ile 410	aac Asn	atg Met	aat Asn	gga Gly	ctc Leu 415	atg Met	1248		
gat Asp	gac Asp	ccc Pro	atg Met 420	aag Lys	gtc Val	tac Tyr	aag Lys	gac Asp 425	cgt Arg	cag Gln	gtt Val	acc Thr	aac Asn 430	atg Met	tgg Trp	1296		
agc Ser	gag Glu 435	cag Gln	gag Glu	agg Arg	gac Asp	acc Thr	ttc Phe 440	cgt Arg	gag Glu	aag Lys	ttt Phe 445	atg Met	cag Gln	cac His	cct Pro	1344		
aag Lys 450	aac Asn	ttt Phe	ggc Gly	ctg Leu	att Ile	gcc Ala 455	tca Ser	ttc Phe	ctg Leu	gag Glu 460	aga Arg	aag Lys	acg Thr	gtc Val	gct Ala	1392		
gag Glu 465	tgt Cys	gtc Val	ctc Leu	tat Tyr	tac Tyr 470	tac Tyr	ctg Leu	acc Thr	aag Lys	aag Lys 475	aat Asn	gaa Glu	aat Asn	tac Tyr	aag Lys 480	1440		
agc Ser	ttg Leu	gtg Val	agg Arg	cgg Arg 485	agc Ser	tat Tyr	cgg Arg	cgc Arg	cgt Arg 490	ggc Gly	aag Lys	agc Ser	cag Gln	cag Gln 495	cag Gln	1488		
cag Gln	cag Gln	cag Gln	caa Gln 500	caa Gln	cag Gln	cag Gln	cag Gln	cag Gln 505	cag Gln	cag Gln	atg Met	gca Ala	cgg Arg 510	agc Ser	agc Ser	1536		
cag Gln	gag Glu	gag Glu 515	aag Lys	gag Glu	gag Glu	aag Lys	gag Glu 520	aag Lys	gag Glu	aag Lys	gag Glu	gcc Ala 525	gac Asp	aag Lys	gag Glu	1584		
gaa Glu	gag Glu 530	aag Lys	cag Gln	gat Asp	gcg Ala	gag Glu 535	aac Asn	gag Glu	aag Lys	gaa Glu 540	gaa Glu	ctc Leu	agc Ser	aag Lys	gag Glu	1632		
aag Lys 545	aca Thr	gac Asp	gac Asp	act Thr	tct Ser 550	ggc Gly	gag Glu	gac Asp	aac Asn	gat Asp 555	gag Glu	aaa Lys	gag Glu	gcc Ala	gtg Val 560	1680		
gcc Ala	tcc Ser	aaa Lys	ggc Gly	cgc Arg 565	aaa Lys	act Thr	gcc Ala	aac Asn	agc Ser 570	caa Gln	ggc Gly	cgc Arg	cgc Arg	aaa Lys 575	ggc Gly	1728		
cgt Arg	atc Ile	acg Thr	cgc Arg 580	tcc Ser	atg Met	gcc Ala	aac Asn	gag Glu 585	gcc Ala	aac Asn	cat His	gag Glu 590	gag Glu	aca Thr	gcc Ala	1776		

[illegible]

gcc Ala	aag Lys	gag Glu 835	cag Gln	aag Lys	tct Ser	gag Glu	gcc Ala 840	gag Glu	gag Glu	atc Ile	gat Asp	gtg Val 845	gga Gly	aag Lys	cca Pro	2544
gag Glu	gag Glu 850	ccc Pro	gag Glu	gcc Ala	tct Ser	gag Glu 855	gag Glu	ccc Pro	ccg Pro	gag Glu	agt Ser 860	gta Val	aag Lys	agt Ser	gac Asp	2592
cac His 865	aag Lys	gag Glu	gag Glu	acc Thr	gag Glu 870	gaa Glu	gag Glu	cct Pro	gaa Glu	gac Asp 875	aaa Lys	gcc Ala	aag Lys	ggc Gly	aca Thr 880	2640
gag Glu	gcc Ala	att Ile	gaa Glu	act Thr 885	gtg Val	tct Ser	gag Glu	gca Ala	cca Pro 890	ctt Leu	aag Lys	gtg Val	gag Glu	gag Glu 895	gct Ala	2688
ggt Gly	agc Ser	aag Lys 900	gca Ala	gct Ala	gtg Val	acc Thr	aag Lys	ggt Gly 905	tcc Ser	agc Ser	tca Ser	ggt Gly 910	gcc Ala	acc Thr	cag Gln	2736
gac Asp	agt Ser 915	gac Asp	tcc Ser	agt Ser	gcc Ala	acc Thr 920	tgc Cys	agt Ser	gcc Ala	gat Asp	gag Glu	gtg Val 925	gac Asp	gaa Glu	ccc Pro	2784
gaa Glu 930	gga Gly	ggt Gly	gac Asp	aag Lys	ggc Gly	agg Arg 935	ctg Leu	ctg Leu	tca Ser	cca Pro 940	agg Arg	ccc Pro	agc Ser	ctc Leu	ctc Leu	2832
acc Thr 945	ccg Pro	gct Ala	gga Gly	gat Asp	ccc Pro 950	cgg Arg	gcc Ala	agt Ser	acc Thr	tcg Ser 955	ccc Pro	cag Gln	aag Lys	ccg Pro	ctg Leu 960	2880
gac Asp	ctg Leu	aag Lys	cag Gln	ctg Leu 965	aag Lys	cag Gln	cga Arg	gca Ala	gcc Ala 970	gcc Ala	atc Ile	ccc Pro	cct Pro	atc Ile 975	gtc Val	2928
acc Thr	aag Lys	gtc Val	cat His 980	gag Glu	ccc Pro	ccc Pro	cgg Arg	gag Glu 985	gac Asp	aca Thr	gta Val	ccc Pro 990	cca Pro	aag Lys	cca Pro	2976
gtt Val	ccc Pro 995	cct Pro	gtg Val	cct Pro	cca Pro	ccc Pro 1000	acg Thr	cag Gln	cac His	cta Leu	cag Gln 1005	cca Pro	gag Glu	ggt Gly	gac Asp	3024
gtg Val 1010	tct Ser	cag Gln	cag Gln	tcg Ser	gga Gly 1015	gga Gly	agt Ser	cca Pro	cgt Arg	ggc Gly 1020	aag Lys	tcc Ser	cgc Arg	agc Ser	cca Pro	3072
gtg Val 1025	cct Pro	cct Pro	gcc Ala	gag Glu 1030	aaa Lys	gag Glu	gca Ala	gag Glu	aaa Lys 1035	ccc Pro	gca Ala	ttc Phe	ttt Phe	ccg Pro	gct Ala 1040	3120
ttc Phe	cca Pro	act Thr	gag Glu 1045	ggc Gly	caa Gln	agc Ser	tac Tyr	cga Arg	ctg Leu 1050	agc Ser	ccc Pro	cac His	gct Ala 1055	ggt Gly	cat His	3168
cgg Arg	ctg Leu	cct Pro 1060	tcc Ser	cat His	cct Pro	cca Pro	cgg Arg 1065	gag Glu	gtg Val	atc Ile	aag Lys 1070	act Thr	tcc Ser	aca Thr	cgc Arg	3216
gct Val	gac Val	cct Pro	ctc Val	ttc Val	tcc Val	tac Val	aca Val	ccc Val	ccc Val	ggt Val	cac Val	ccg Val	ctg Val	cct Val	ctg Val	3264

項目	1990年	1991年	1992年	1993年	1994年	1995年	1996年	1997年	1998年	1999年	2000年	2001年	2002年	2003年	2004年	2005年	2006年	2007年	2008年	2009年	2010年	2011年	2012年	2013年	2014年	2015年	2016年	2017年	2018年	2019年	2020年	2021年	2022年	2023年	2024年	2025年	2026年	2027年	2028年	2029年	2030年	2031年	2032年	2033年	2034年	2035年	2036年	2037年	2038年	2039年	2040年	2041年	2042年	2043年	2044年	2045年	2046年	2047年	2048年	2049年	2050年	2051年	2052年	2053年	2054年	2055年	2056年	2057年	2058年	2059年	2060年	2061年	2062年	2063年	2064年	2065年	2066年	2067年	2068年	2069年	2070年	2071年	2072年	2073年	2074年	2075年	2076年	2077年	2078年	2079年	2080年	2081年	2082年	2083年	2084年	2085年	2086年	2087年	2088年	2089年	2090年	2091年	2092年	2093年	2094年	2095年	2096年	2097年	2098年	2099年	2100年																																																								
人口	120,000,000	121,000,000	122,000,000	123,000,000	124,000,000	125,000,000	126,000,000	127,000,000	128,000,000	129,000,000	130,000,000	131,000,000	132,000,000	133,000,000	134,000,000	135,000,000	136,000,000	137,000,000	138,000,000	139,000,000	140,000,000	141,000,000	142,000,000	143,000,000	144,000,000	145,000,000	146,000,000	147,000,000	148,000,000	149,000,000	150,000,000	151,000,000	152,000,000	153,000,000	154,000,000	155,000,000	156,000,000	157,000,000	158,000,000	159,000,000	160,000,000	161,000,000	162,000,000	163,000,000	164,000,000	165,000,000	166,000,000	167,000,000	168,000,000	169,000,000	170,000,000	171,000,000	172,000,000	173,000,000	174,000,000	175,000,000	176,000,000	177,000,000	178,000,000	179,000,000	180,000,000	181,000,000	182,000,000	183,000,000	184,000,000	185,000,000	186,000,000	187,000,000	188,000,000	189,000,000	190,000,000	191,000,000	192,000,000	193,000,000	194,000,000	195,000,000	196,000,000	197,000,000	198,000,000	199,000,000	200,000,000	201,000,000	202,000,000	203,000,000	204,000,000	205,000,000	206,000,000	207,000,000	208,000,000	209,000,000	210,000,000	211,000,000	212,000,000	213,000,000	214,000,000	215,000,000	216,000,000	217,000,000	218,000,000	219,000,000	220,000,000	221,000,000	222,000,000	223,000,000	224,000,000	225,000,000	226,000,000	227,000,000	228,000,000	229,000,000	230,000,000	231,000,000	232,000,000	233,000,000	234,000,000	235,000,000	236,000,000	237,000,000	238,000,000	239,000,000	240,000,000	241,000,000	242,000,000	243,000,000	244,000,000	245,000,000	246,000,000	247,000,000	248,000,000	249,000,000	250,000,000	251,000,000	252,000,000	253,000,000	254,000,000	255,000,000	256,000,000	257,000,000	258,000,000	259,000,000	260,000,000	261,000,000	262,000,000	263,000,000	264,000,000	265,000,000	266,000,000	267,000,000	268,000,000	269,000,000	270,000,000	271,000,000	272,000,000	273,000,000	274,000,000	275,000,000	276,000,000	277,000,000	278,000,000	279,000,000	280,000,000	281,000,000	282,000,000	283,000,000	284,000,000	285,000,000	286,000,000

1315	1320	1325	
gac tac tta cgg cgg gag gcc aag ctc ttg aag cga gaa ggg aca cca			4032
Asp Tyr Leu Arg Arg Glu Ala Lys Leu Leu Lys Arg Glu Gly Thr Pro			
1330	1335	1340	
cct ccc cca cca cca cct cgg gac ctg act gag acc tac aag ccc cgg			4080
Pro Pro Pro Pro Pro Pro Arg Asp Leu Thr Glu Thr Tyr Lys Pro Arg			
1345	1350	1355	1360
ccc ctg gac cct ctg ggt ccc ctg aag ctg aag ccg act cac gag ggt			4128
Pro Leu Asp Pro Leu Gly Pro Leu Lys Leu Lys Pro Thr His Glu Gly			
1365	1370	1375	
gtg gta gca act gtg aag gag gcg ggc cgc tct atc cat gag atc ccg			4176
Val Val Ala Thr Val Lys Glu Ala Gly Arg Ser Ile His Glu Ile Pro			
1380	1385	1390	
aga gag gag ctg cgc cgc aca cct gag cta ccc ctg gca cca cgg cct			4224
Arg Glu Glu Leu Arg Arg Thr Pro Glu Leu Pro Leu Ala Pro Arg Pro			
1395	1400	1405	
ctg aag gag ggt tcc atc acc cag ggc acc cca ctc aag tac gac tct			4272
Leu Lys Glu Gly Ser Ile Thr Gln Gly Thr Pro Leu Lys Tyr Asp Ser			
1410	1415	1420	
ggg gca ccc tcc act ggc acc aag aaa cac gac gtg cgc tcc atc atc			4320
Gly Ala Pro Ser Thr Gly Thr Lys Lys His Asp Val Arg Ser Ile Ile			
1425	1430	1435	1440
ggc agc ccc ggc cgg cct ttc cct gcc ctg cac ccg ctg gac ata atg			4368
Gly Ser Pro Gly Arg Pro Phe Pro Ala Leu His Pro Leu Asp Ile Met			
1445	1450	1455	
gct gac gcc cgg gca ctg gag cgt gcc tgc tat gaa gag agt ctg aag			4416
Ala Asp Ala Arg Ala Leu Glu Arg Ala Cys Tyr Glu Glu Ser Leu Lys			
1460	1465	1470	
agc cgg tca ggg acc agc agt ggt gca ggg ggc tcc atc aca cgt ggg			4464
Ser Arg Ser Gly Thr Ser Ser Gly Ala Gly Gly Ser Ile Thr Arg Gly			
1475	1480	1485	
gct cca gtc gtc gtg cct gaa ctg ggc aag cca cgg caa agc cca ctg			4512
Ala Pro Val Val Val Pro Glu Leu Gly Lys Pro Arg Gln Ser Pro Leu			
1490	1495	1500	
act tac gaa gac cac ggg gca ccc ttc acc agt cac ctg cca cgt ggc			4560
Thr Tyr Glu Asp His Gly Ala Pro Phe Thr Ser His Leu Pro Arg Gly			
1505	1510	1515	1520
tcc cct gtg acc acg agg gag ccc acg cca cgc ctt cag gaa ggc agc			4608
Ser Pro Val Thr Thr Arg Glu Pro Thr Pro Arg Leu Gln Glu Gly Ser			
1525	1530	1535	
ctc cta tcc agc aag gcg tcc cag gac cgg aag ctg aca tct aca ccc			4656
Leu Leu Ser Ser Lys Ala Ser Gln Asp Arg Lys Leu Thr Ser Thr Pro			
1540	1545	1550	
cgg gag atc gcc aag tcc cca cac agc act gtg ccc gag cac cac cct			4704
Arg Glu Ile Ala Lys Ser Pro His Ser Thr Val Pro Glu His His Pro			
1555	1560	1565	

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cac ccc atc tcc ccc tat gag cac ttg ctc cgg ggc gtg act ggt gtg	4752
His Pro Ile Ser Pro Tyr Glu His Leu Leu Arg Gly Val Thr Gly Val	
1570 1575 1580	
gac ctg tac cgt ggt cac atc cca ttg gcc ttt gac ccc acc tcc ata	4800
Asp Leu Tyr Arg Gly His Ile Pro Leu Ala Phe Asp Pro Thr Ser Ile	
1585 1590 1595 1600	
ccc cga ggg atc cct ctg gaa gca gca gcc gca gcc tac tac ctg ccc	4848
Pro Arg Gly Ile Pro Leu Glu Ala Ala Ala Ala Ala Tyr Tyr Leu Pro	
1605 1610 1615	
cgg cac ttg gcc ccc agc ccc acc tac cca cac ctg tac cca cct tac	4896
Arg His Leu Ala Pro Ser Pro Thr Tyr Pro His Leu Tyr Pro Pro Tyr	
1620 1625 1630	
ctc atc cgc ggc tac cct gac acg gcg gcc ctg gag aac cgc cag acc	4944
Leu Ile Arg Gly Tyr Pro Asp Thr Ala Ala Leu Glu Asn Arg Gln Thr	
1635 1640 1645	
atc atc aat gac tac atc acc tcg cag cag atg cac cac aac gct gcc	4992
Ile Ile Asn Asp Tyr Ile Thr Ser Gln Gln Met His His Asn Ala Ala	
1650 1655 1660	
tcc gcc atg gcc cag cgt gct gac atg ctg agg ggt ctg tca ccg cga	5040
Ser Ala Met Ala Gln Arg Ala Asp Met Leu Arg Gly Leu Ser Pro Arg	
1665 1670 1675 1680	
gag tcc tcg ctg gcc ctc aat tat tcc gct ggc cca aga ggc att atc	5088
Glu Ser Ser Leu Ala Leu Asn Tyr Ser Ala Gly Pro Arg Gly Ile Ile	
1685 1690 1695	
gac ctg tcc caa gtg cca cac ctg ccc gtg ctg gtg cca cca acg cca	5136
Asp Leu Ser Gln Val Pro His Leu Pro Val Leu Val Pro Pro Thr Pro	
1700 1705 1710	
ggc acc cct gcc acc gcc atc gac cgc ctt gcc tac ctc ccc act gcg	5184
Gly Thr Pro Ala Thr Ala Ile Asp Arg Leu Ala Tyr Leu Pro Thr Ala	
1715 1720 1725	
ccc cca ccc ttc agc agc cgc cac agt agc tca ccg ctg tcc cca gga	5232
Pro Pro Pro Phe Ser Ser Arg His Ser Ser Ser Pro Leu Ser Pro Gly	
1730 1735 1740	
ggc ccc act cac cta gct aaa cca act gcc aca tct tca tcg gag cgg	5280
Gly Pro Thr His Leu Ala Lys Pro Thr Ala Thr Ser Ser Ser Glu Arg	
1745 1750 1755 1760	
gaa cgg gaa cgt gag cgg gaa cga gac aag tcc atc ctc acg tct acc	5328
Glu Arg Glu Arg Glu Arg Glu Arg Asp Lys Ser Ile Leu Thr Ser Thr	
1765 1770 1775	
act aca gtg gag cat gca ccc atc tgg aga cct ggt acg gag cag agc	5376
Thr Thr Val Glu His Ala Pro Ile Trp Arg Pro Gly Thr Glu Gln Ser	
1780 1785 1790	
agc ggg gct ggg ggc agc agc cgc ccc gcc tcc cac acc cac cag cac	5424
Ser Gly Ala Gly Gly Ser Ser Arg Pro Ala Ser His Thr His Gln His	
1795 1800 1805	

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tcg ccc atc tcc ccc cgg acc cag gac gcc ttg cag cag agg ccc agt	5472
Ser Pro Ile Ser Pro Arg Thr Gln Asp Ala Leu Gln Gln Arg Pro Ser	
1810 1815 1820	
gtg ctg cac aac acg agc atg aag ggc gtg gtc acc tcc gtg gaa ccc	5520
Val Leu His Asn Thr Ser Met Lys Gly Val Val Thr Ser Val Glu Pro	
1825 1830 1835 1840	
ggc acg ccc acg gtc ctg agg tcc acc tcc acc tct tcc cct gtc cgc	5568
Gly Thr Pro Thr Val Leu Arg Ser Thr Ser Thr Ser Ser Pro Val Arg	
1845 1850 1855	
cca gct gcc aca ttc cca cct gcc acc cac tgc cca ctt ggt ggc acc	5616
Pro Ala Ala Thr Phe Pro Pro Ala Thr His Cys Pro Leu Gly Gly Thr	
1860 1865 1870	
ctt gaa ggg gtc tac cct acc ctc atg gag ccc gtc ctg tta ccc aag	5664
Leu Glu Gly Val Tyr Pro Thr Leu Met Glu Pro Val Leu Leu Pro Lys	
1875 1880 1885	
gag acc tct cgg gtc gcc cgg ccc gag cgg ccc cgt gtg gac ggt ggc	5712
Glu Thr Ser Arg Val Ala Arg Pro Glu Arg Pro Arg Val Asp Gly Gly	
1890 1895 1900	
cat gcc ttc ctc acc aaa ccc ccg gcc cgg gag ccc gcc tcc tca ccc	5760
His Ala Phe Leu Thr Lys Pro Pro Ala Arg Glu Pro Ala Ser Ser Pro	
1905 1910 1915 1920	
agc aag agc tcc gag ccc cga tcc cta gca ccc ccc agc tcc agc cac	5808
Ser Lys Ser Ser Glu Pro Arg Ser Leu Ala Pro Pro Ser Ser Ser His	
1925 1930 1935	
aca gcc atc gcc cgc acc cca gca aag agc ctt gca ccc cac cat gcc	5856
Thr Ala Ile Ala Arg Thr Pro Ala Lys Ser Leu Ala Pro His His Ala	
1940 1945 1950	
agt ccg gac ccg ccg ggg ccc acc tcc gcc tca gat ctg cac cga gaa	5904
Ser Pro Asp Pro Pro Gly Pro Thr Ser Ala Ser Asp Leu His Arg Glu	
1955 1960 1965	
aag act caa agt aaa ccc ttt tcc atc cag gaa ttg gaa ctc cgt tct	5952
Lys Thr Gln Ser Lys Pro Phe Ser Ile Gln Glu Leu Glu Leu Arg Ser	
1970 1975 1980	
ctg ggt tac cac agt gga gct ggc tac agc ccc gat ggg gtg gag ccc	6000
Leu Gly Tyr His Ser Gly Ala Gly Tyr Ser Pro Asp Gly Val Glu Pro	
1985 1990 1995 2000	
atc agc ccg gtg agc tcc ccc agc ctg acc cac gac aag ggg ctc tcc	6048
Ile Ser Pro Val Ser Ser Pro Ser Leu Thr His Asp Lys Gly Leu Ser	
2005 2010 2015	
aaa cct ctg gaa gag cta gag aag agc cac ttg gaa ggg gag ctg cgg	6096
Lys Pro Leu Glu Glu Leu Glu Lys Ser His Leu Glu Gly Glu Leu Arg	
2020 2025 2030	
cac aag cag cca ggc ccc atg aag ctc agc gcg gag gct gcc cat ctc	6144
His Lys Gln Pro Gly Pro Met Lys Leu Ser Ala Glu Ala Ala His Leu	
2035 2040 2045	
cca cat ctg cgg cca ctg ccc gag agc cag ccc tca tcc agc cca ctc	6192

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ctc Leu 2065	cag Gln 2065	act Thr 2065	gcc Ala 2065	cca Pro 2070	ggc Gly 2070	atc Ile 2070	aaa Lys 2070	ggt Gly 2075	cac His 2075	cag Gln 2075	agg Arg 2075	gtg Val 2075	gtc Val 2080	acc Thr 2080	ctg Leu 2080	6240
gct Ala 2085	cag Gln 2085	cac His 2085	atc Ile 2085	agc Ser 2085	gag Glu 2090	gtc Val 2090	att Ile 2090	acg Thr 2090	cag Gln 2095	gac Asp 2095	tac Tyr 2095	acc Thr 2095	cgg Arg 2095	cac His 2095	cac His 2095	6288
ccg Pro 2100	cag Gln 2100	cag Gln 2100	ctc Leu 2100	agt Ser 2105	ggc Gly 2105	ccc Pro 2105	ctt Leu 2105	ccc Pro 2110	gcc Ala 2110	cct Pro 2110	ctc Leu 2110	tac Tyr 2110	tcc Ser 2110	ttt Phe 2110	ccc Pro 2110	6336
gga Gly 2115	gcc Ala 2115	agc Ser 2115	tgc Cys 2120	cct Pro 2120	gtg Val 2120	ctg Leu 2120	gat Asp 2125	ctt Leu 2125	cgc Arg 2125	cgc Arg 2125	cca Pro 2125	ccc Pro 2125	agt Ser 2130	gac Asp 2130	ctc Leu 2130	6384
tac Tyr 2130	ctc Leu 2130	cca Pro 2135	ccc Pro 2135	ccc Pro 2135	gac Asp 2135	cat His 2140	ggc Gly 2140	acc Thr 2140	cca Pro 2140	gcc Ala 2140	cgg Arg 2140	gga Gly 2140	tcc Ser 2140	ccc Pro 2140	cac His 2140	6432
agt Ser 2145	gaa Glu 2145	ggg Gly 2150	ggc Gly 2150	aaa Lys 2150	agg Arg 2150	tcc Ser 2155	cca Pro 2155	gaa Glu 2155	ccc Pro 2155	agc Ser 2155	aaa Lys 2155	aca Thr 2160	tcg Ser 2160	gtc Val 2160	ctg Leu 2160	6480
ggc Gly 2165	agc Ser 2165	agt Ser 2165	gag Glu 2170	gat Asp 2170	gcc Ala 2170	att Ile 2175	gag Glu 2175	cct Pro 2175	gtg Val 2175	tcc Ser 2175	cca Pro 2175	cca Pro 2175	gag Glu 2175	ggc Gly 2175	atg Met 2175	6528
act Thr 2180	gag Glu 2180	cca Pro 2180	gga Gly 2185	cat His 2185	gct Ala 2185	cgg Arg 2185	agc Ser 2185	gct Ala 2185	gtg Val 2185	tac Tyr 2190	cca Pro 2190	ctg Leu 2190	ctg Leu 2190	tat Tyr 2190	cga Arg 2190	6576
gac Asp 2195	ggg Gly 2195	gaa Glu 2195	cag Gln 2200	ggc Gly 2200	gag Glu 2200	ccc Pro 2205	agg Arg 2205	atg Met 2205	ggc Gly 2205	tct Ser 2205	aag Lys 2205	tct Ser 2205	cca Pro 2205	ggc Gly 2205	aac Asn 2205	6624
acc Thr 2210	agc Ser 2210	cag Gln 2215	ccg Pro 2215	cca Pro 2215	gcc Ala 2215	ttc Phe 2220	ttc Phe 2220	agt Ser 2220	aag Lys 2220	ctg Leu 2220	act Thr 2220	gag Glu 2220	agc Ser 2220	aac Asn 2220	tcc Ser 2220	6672
gcc Ala 2225	atg Met 2225	gtg Val 2230	aag Lys 2230	tcg Ser 2230	aag Lys 2235	aag Lys 2235	cag Gln 2235	gag Glu 2235	atc Ile 2235	aac Asn 2235	aag Lys 2240	aaa Lys 2240	ctc Leu 2240	aac Asn 2240	acc Thr 2240	6720
cac His 2245	aac Asn 2245	cgg Arg 2245	aac Asn 2250	gag Glu 2250	cca Pro 2250	gaa Glu 2250	tac Tyr 2250	aat Asn 2250	att Ile 2250	ggc Gly 2255	cag Gln 2255	cct Pro 2255	ggg Gly 2255	acg Thr 2255	gaa Glu 2255	6768
atc Ile 2260	ttc Phe 2260	aac Asn 2260	atg Met 2265	ccc Pro 2265	gcc Ala 2265	atc Ile 2265	act Thr 2265	gga Gly 2265	gca Ala 2265	ggc Gly 2270	ctt Leu 2270	atg Met 2270	acc Thr 2270	tgt Cys 2270	aga Arg 2270	6816
agc Ser 2275	cag Gln 2275	gcg Ala 2280	gtg Val 2280	caa Gln 2280	gaa Glu 2280	cac His 2280	gcc Ala 2285	agc Ser 2285	acc Thr 2285	aac Asn 2285	atg Met 2285	ggg Gly 2285	cta Leu 2285	gag Glu 2285	gcc Ala 2285	6864
att Ile 6912	att Ile 6912	aga Arg 6912	aag Lys 6912	gca Ala 6912	ctc Leu 6912	atg Met 6912	ggt Gly 6912	aaa Lys 6912	tat Tyr 6912	gat Asp 6912	cag Gln 6912	tgg Trp 6912	gaa Glu 6912	gag Glu 6912	ccc Pro 6912	6912

2295

